



Superfund Program Clean-up Proposal Clark Fork River Operable Unit of the Milltown Reservoir/Clark Fork River Superfund Site

Fact Sheet

The U. S. Environmental Protection Agency (EPA), in consultation with the Montana Department of Environmental Quality (DEQ), is proposing a plan to address 120 river miles of the Clark Fork River, from the headwaters at Warm Springs Creek to Milltown Reservoir (just east of Missoula); approximate boundaries are shown on the Location Map.

EPA is the lead agency for the Clark Fork River Operable Unit (CFR OU), and DEQ is the supporting agency. Local, State, and Federal government agencies, the Confederated Salish and Kootenai Tribes, academic research groups, and public interest groups have participated in the Superfund process up to the present. The potentially responsible party is the Atlantic Richfield Company.

This fact sheet generally summarizes EPA's Proposed Plan for the Clark Fork River Operable Unit. It is intended to provide general and simplified information about the full Proposed Plan, and does not take the place of the full Proposed Plan. Copies of the complete Proposed Plan are available upon request from EPA.

EPA's preferred remedy for the CFR OU combines portions of three alternatives. It includes the following for Reach A and limited areas within Reach B (see map):

- Areas of exposed tailings will be removed, with a limited exception.
- Some areas with impacted soils and vegetation will be removed. The depth of contamination and amount of water in the soil may prevent effective in-place treatment.
- The other areas with impacted soils and vegetation will be treated in-place.
- Streambanks will be stabilized in areas along both sides of the river for a total bank

length of approximately 56 miles. A 50-foot riparian area will also be established on both sides of the river.

- All removed contamination will be disposed of at Opportunity Ponds.
- Best Management Practices will be used to protect the remedy.
- Institutional Controls and additional sampling and maintenance will be required to protect human health.
- Monitoring water quality and vegetation during and after construction will be required.



What are the Contaminants of Concern?

The heavy metals and arsenic in the CFR OU, listed below, are from historic mining, milling, and smelting processes linked primarily to the Anaconda Copper Company operations in Butte and Anaconda:

Cadmium Copper	Arsenic Zinc	Lead
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EPA focuses on copper in the proposed plan because:

- It is present in significant concentrations within the mining and smelting wastes
- It has a large and consistent data set
- It is the most toxic of the metals to aquatic life in this river system
- It can be toxic to plants in the floodplain.

What Problems Does the Contamination Cause?

The floodplain is severely impacted by the presence of mining wastes. Tailings materials present in the root zone of riparian area soils are toxic to terrestrial plants. The most obvious instances of this are slickens areas — areas of exposed tailings that generally lack vegetation. Other areas with impacted soils also present a risk. These areas of impacted soils and vegetation are caused by buried tailings and contaminated soils.

Acronyms

ARAR:	Applicable or Relevant and Appropriate Requirements; targets for cleanup, such as regulatory requirements
ARCO	Now Atlantic Richfield Company
CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act; the Federal Superfund law
CFR OU:	Clark Fork River Operable Unit; the area considered for cleanup
DEQ:	Montana Department of Environmental Quality
EPA:	U. S. Environmental Protection Agency
RI/FS:	Remedial Investigation/Feasibility Study; documents that were used to describe problems and investigate cleanup alternatives
USGS:	U. S. Geological Survey

The lack of floodplain vegetation is caused by metal contamination and related acid generation. This fundamental problem leads to a host of other impacts:

- Accelerated bank erosion and channel migration, causing unacceptable risks to aquatic life and land use problems.
- Vulnerability of floodplain to destabilization, which could cause the single-thread river to become a braided system.
- Environmental hazards to terrestrial and aquatic life, especially from pulse events (stormwater-caused spikes of copper to the river under certain conditions).
- Degraded groundwater quality.
- Poor agricultural productivity.
- Degraded surface water as a result of metals and sediments entering the river.

To eliminate or reduce these impacts, EPA must address the problem of stressed or absent vegetation and the resulting surface water contamination.

General Clean-up Strategy

The preferred remedy for the CFR OU is a combination of removal and in-place treatment of contaminated mining waste and soils and streambank stabilization. The remedy will be implemented in the banks and floodplain of all of Reach A and small localized areas of Reach B. In Reach C, it was determined that the low level of risk posed by the diffuse contamination cannot be addressed by any reasonable or feasible clean-up action.

The combination reflects the need to remove some of the contaminated areas while treating and improving other areas that have potential for more healthy vegetation. There is a strong bias to leave existing woody vegetation undisturbed and to improve poorly vegetated streambank areas because of their importance in preventing erosion, channel migration, and floodplain destabilization. A Riparian Evaluation System (RipES) will be used to

better define many contaminated areas and streambanks for cleanup.

The preferred remedy may require a total of approximately ten construction seasons, with no more than two years on any one property as a goal. Coordination with land owners is important to maintain effectiveness of the remedy and allow as much historical use as possible. The estimated cost of the preferred remedy is \$90 to 100 million.

How has the Clark Fork River and Floodplain been Studied?

Numerous sampling and various clean-up studies and demonstration projects have been implemented on the Clark Fork River. Atlantic Richfield Company conducted large portions of the Remedial Investigation and Feasibility Study (RI/FS), and completed demonstration projects for in-place treatment. EPA conducted oversight of the RI/FS activities, in consultation with DEQ, and conducted the Human Health and Ecological Risk Assessments, the geomorphological studies (primarily through U.S. Geological Survey [USGS] and Atlantic Richfield Company), and the Applicable or Relevant and Appropriate Requirements (ARARs) assessment and identification. EPA and Atlantic Richfield Company relied upon other sampling and investigatory efforts conducted along the Clark Fork River as appropriate and consistent with the Superfund law, including work performed as part of the natural resource damage investigations and responses by the U.S. Department of Interior, the State of Montana, the Confederated Salish and Kootenai Tribes and Atlantic Richfield Company.

Key documents with detailed information about the CFR OU include:

- CFR OU Remedial Investigation Report Final Draft – ARCO 1998, approved by EPA.
- CFR OU Feasibility Study, Public Review Draft – Atlantic Richfield Company 2002. This report contains a detailed list of ARARs.

- CFR OU Ecological Risk Assessment – prepared by Syracuse Research Corporation for EPA – 2001.
- CFR OU Human Health Risk Assessment – prepared by Roy F. Weston, Inc., for EPA – 1998.
- Human Health Risk Assessment Addendum Prepared by Syracuse Research Corporation for EPA – 2001.
- Geomorphology, Floodplain Tailings, and Metal Transport in the Upper Clark Fork Valley, Montana – USGS and ARCO, 1998.

Evaluation of Alternatives

The Superfund law and regulations require that EPA, in consultation with DEQ, evaluate and compare the remedial clean-up alternatives considering EPA's nine criteria. These nine criteria, shown in the box below, are derived from the Superfund law.

Montana DEQ will consider public comment received on both the proposed plan and feasibility study prior to making its determination as to State acceptance.

EPA's Nine Evaluation Criteria

Threshold Criteria—Must be Addressed

1. Overall Protection of Human Health and the Environment—*Must be protective of human health and the environment.*
2. Compliance with ARARs—*Includes state and federal regulations; where ARARs cannot be met, a waiver is required*

Balancing Criteria—Must be Considered

1. Long-Term Effectiveness and Permanence
2. Reduction of Toxicity, Mobility, and Volume
3. Short-Term Effectiveness
4. Implementability
5. Capital and Operating and Maintenance Cost

Modifying Criteria—Must be Considered

1. State Acceptance
2. Community Acceptance

Administrative Record Review

The Administrative Record for the site contains documents that have been used to make decisions on how to clean up the site. The Administrative Record can be reviewed at:

EPA's Records Center
10 West 15th Street; Suite 3200
Helena, MT 59626
Phone: 406-457-5046
Monday – Friday

You may also call the Records Center for a copy of the complete, 36-page Proposed Plan.

For information on the Clark Fork River or for a full copy of the Proposed Plan, check any of the following **information repositories**:

Hearst Free Library
4th and Main Street
Anaconda, MT 59711
Phone: 406-563-6932

EPA Butte Office
155 West Granite
Butte, MT 59701
Phone: 406-782-3838

Montana Tech
1300 West Park
Butte, MT 59701
Phone: 406-496-4281

Grant-Kohrs Ranch – National Historic Site
National Park Service
210 Missouri Avenue
Deer Lodge, MT 59722
Phone: 406-846-2070

Powell County Planning Office
409 Missouri Street
Deer Lodge, MT 59722
Phone: 406-846-3680

Mansfield Library
University of Montana
Missoula, MT 59812
Phone: 406-243-6860

Missoula City/County Library
301 East Main Street
Missoula, MT 59802
Phone: 406-721-2665

Send written comments by October 13 to:

CFR Comments
Scott Brown or Wendy Thomi
U.S.E.P.A. Region 8 (8MO)
10 W. 15th St.; Suite 3200
Helena, MT 59626

And/or comment in person on the record at the CFR OU Public Meetings:

September 17, 2002	September 19, 2002
6:30 – 8:30 p.m.	7:00 – 9:00 p.m.
Community Center	Holiday Inn Parkside
Deer Lodge, MT	200 South Pattee Street
	Missoula, MT

For more information call or write to:

Wendy Thomi, EPA, 1-866-457-2690 (toll free),
thomi.wendy@epa.gov

or

Robin Shropshire, DEQ, 406-444-2885,
rshropshire@state.mt.us

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